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Institute 160, Fryazino

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klystrons at Institute 160

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Although the K3 series magnetrons were developed at Institute 160, all production of these types takes place at Svetlana, Leningrad. Production commenced in 1949

A certain percentage of klystrons produced at Svetlana were sent to Institute 160 to be spot-checked in laboratory 172, headed by Fischbein.

approximately 20 to 30 of the K3 series were received from Svetlana each month. The first pilot run of the K3 series was tested at Institute 160 in 1949. The percentage of rejects was extremely high. the rejection rate in 1950 was approximately 50%, and the rate dropped considerably below this in later years. The K3 series samples received for testing by 1952 were at least as good in quality as, if not better than, the American 723 a/b counterpart. Rejections were due primarily to lack of attention being paid to tolerances during the manufacture of component parts. The K10-2 type production at Institute 160 was approximately 10 to 15 daily in 1950, and in 1951 grew to 3 to 4 times as many. The 1952 production of this type probably expanded progressively. The rejection rate was approximately 75% during the first runs and gradually decreased to approximately 40% during the latter part of 1951. In addition to lack of proper attention given to manufacturing tolerances, the K10-2 type also was unstable in operation while undergoing 5G horizontal and vertical shake tests. During operation under these circumstances, specifications called for an amplitude modulation of not more than 1 to 2% of the operating frequency, and frequency modulation of not more than approximately 50 kilocycles. All series of klystrons tested at Institute 160 were subjected to vibration tests; however, the K3 and KT series were not required to meet the AM and FM requirements of the K10-2 type.

The KT series klystrons (copies of American type 2K45) were ready for production in April 1952

the nomenclature of the K3 series, as corresponds to tuning ranges, should be revised as follows.

K3 - 1	2.8 to 3.1 cm
K3 - 2	3.05 to 3.5 cm
K3 - 3	3.5 to 4.1 cm

additional information on the previously mentioned unknown type klystron which is tuneable from 2.8 to 4.5 cm the tube would actually tune to a lower limit of only 4 cm and that the specifications also call for a 1/10 second change to any one of five spot wave lengths of 3.03, 3.07, 3.10, 3.15, and 3.22 cm.

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